AMG-18 HLA and External Standards

9 April 1997

Overview

- HLA has been established as the technical architecture for DoD simulations
- Several opportunities to work with larger standards activities
 - DoD: Joint Technical Architecture (JTA)
 - IEEE: Simulation Interoperability Standards Organization (SISO) industry standards

JTA: Background

- JTA development status
 - Version 1.0 adopted in October 1996
 - Applies to C4I systems
 - Essentially a standards profile
- M&S annex was drafted and coordinated in conjunction with JTA
 1.0 development
 - Withdrawn when it was determined to be out of scope
- Architecture Coordination Council (ACC) formed in January 1997
 - Objective is to coordinate among DoD architectures
 - Approach is to use JTA as starting point
 - Add to JTA, architectures and standards for other domains
 - M&S has been identified as a pathfinder effort

Approach to M&S Annex Preparation

- Draft annex has been updated to reflect changes since last summer
- Distributed last week to AMG for review
- POCs and comments requested by 16 April
 - Rosemary Hsu (rhsu@dmso.mil) will be focal point for collecting input
- Annex will be revised and made available for a second round review
- Target is final draft complete by 1 June
- Annex will be handled through JTA development process
 - DMSO will participate; other participants are welcome; contact DMSO with specifics

Reviews of the M&S Annex

- Content of annex
 - This is essentially a compendium of M&S specific architecture and data standards
- Body of the JTA (including appendices)
 - Annex should identify any exceptions for M&S to standards cited in the body of the JTA
 - Particularly important to system developers

IEEE SISO Standards

- IEEE Simulation Interoperability Standards Organization (SISO) has established a process for standards development
- Process has been documented in the draft SISO Policy and Procedures (P&P) which is out for comment
- Process is sufficiently mature to begin to accept standards nominations
- Propose to nominate HLA for standardization
 - Draft standards nomination was distributed to AMG for comment last week

DoD AMG and SISO Standards Process

- AMG is a DoD organization responsible for M&S architecture definition and evolution for the DoD
 - Review technical progress in implementation of HLA across the DoD
 - Identify technical tools and support needed in this implementation process
 - Evolve the architecture as experience indicates new/enhanced capabilities are required
- IEEE SISO is an industry organization to develop general use standards to support simulation interoperability
- DoD participates in IEEE standards development in same way as other organizations
 - DoD M&S standards are developed on a corporate basis
 - Use of industry standards across DoD and industry is very desirable
 - DoD -- via the AMG/DMSO --should be an active participant in the IEEE standards process

DoD AMG and SISO Standards Process

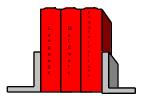
- AMG activities will continue in parallel with IEEE standards development
 - For standards nominations in progress, new requirements or changes in specifications would be provided to IEEE standards process along with supporting technical material
 - Once a version of an IEEE standard is established, it will be reviewed to determine acceptability to DoD
 - Recommendations will be made and actions taken to establish these as standards for the DoD
- Continued AMG activities will review technical progress in implementation of these standards
 - Ongoing assessment of any changes needed to those standards
 - Again, providing results to IEEE standards process

Recommendation -- IEEE Standards

- Submit standards nomination to IEEE SISO
 - Start the standards development process
- Provide ongoing support to the IEEE SISO standards development process via AMG/TST; report on progress at AMG meetings
- Solicit inputs from AMG for participants in standards development process (Standards Activity Committee, Standards Development Group members, drafting group support, reviewers, etc.)

Backups

JTA, COE and HLA Relationship



Joint Technical Architecture (JTA)

• Profile of accepted implementation standards

"Build software to conform to standards profile"

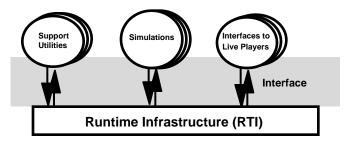


Common Operating Environment

(CQFI)cation development uses COE supplied suite of software tools/applications/OS

- Conforms to JTA standards profile
- Special purpose software is provided by developer

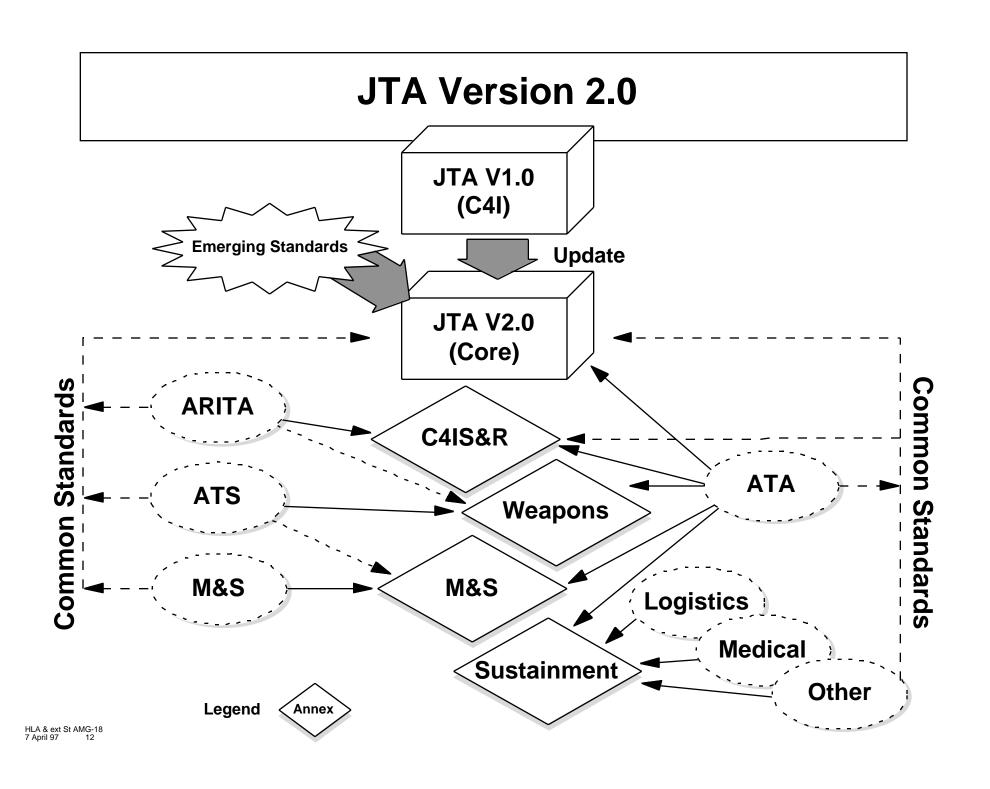
"Build using our suite of general purpose supporting software"



High Level Architecture (HLA)

- Defines the major functional components, design rules, and interfaces of a computer-based simulation system, specifying (conceptually) how they work together as a whole.
- HLA is defined by: Rules, Interface Specification, Object Model Template
- Includes application programmers interface (API) between simulations (federates) and RTI
- Implementation independent specification; no specific software (or hardware) implementation required
- Simulations, RTIs, and C4I application to RTI interfaces which support GCCS would:
 - Reside in the COE
 - Utilize COE supported S/W as appropriate
- RTI S/W implementation resident in COE
 - Initially as special purpose support S/W
 - Eventually as part of COE supplied S/W

The JTA is being extended to cover M&S, with the HLA included as a standard for the M&S domain (in an M&S Annex to the JTA)



SISO Standards Activity Product Development

Issue Identification

Product
Evaluation
&
Evolution

The four stages of the product development process

Balloting

Configuration
Management
&
Re-certification

SISO Standards Activity Product Development

Product evaluation criteria

- determine entry and exit to the stages and sub-stages of the product development process
- established by the SAC
- ensure fair and consistent evaluation, based on SISO guiding principles
- increase in rigor across the stages of the process

SISO Standards Activity Product Development

Stage 1: Issue Identification

Issue statements are developed by the proponent and are the basis for evaluation

- Problem or issue
- Proposed approach
- Results of evaluation of alternative approaches
- Prototype(s) identification
- Impact on simulation domains
- Impact on other existing SISO products
- Community discussion history
- Candidate SDG members
- Identification of mechanism for community input

SISO Standards Activity Product Development

Stage 1: Issue Identification

Sub-stage	SISO Community	SAC	EXCOM
Raise Issue	1		
Draft Issue Statement (IS)	2		
Submit IS	3		
Evaluate (Accept or Reject) IS		4	
Post Accepted IS		5	
Respond to IS	6		
Evaluate (Accept or Reject) IS		7	
Prioritize Accepted IS		8	
Approve IS			9

SISO Standards Activity Product Development

Stage 2: Product Evaluation and Evolution

